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|   |             |                      |                              |                  |
|---|-------------|----------------------|------------------------------|------------------|
| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
| 10/786,652  | 02/25/2004  | Srinivas Bollepalli  | 03234.0018U3                 | 2861             |
| 23859 7590 03/19/2007<br>NEEDLE & ROSENBERG, P.C.<br>SUITE 1000<br>999 PEACHTREE STREET<br>ATLANTA, GA 30309-3915 |             |                      | EXAMINER<br>THOMAS, JAISON P |                  |
|   |             |                      | ART UNIT                     | PAPER NUMBER     |
|   |             |                      | 1751                         |                  |
| SHORTENED STATUTORY PERIOD OF RESPONSE  |             | MAIL DATE            | DELIVERY MODE                |                  |
| 3 MONTHS  |             | 03/19/2007           | PAPER                        |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/786,652

Applicant(s)

SRINIVAS, BOLLEPALLI

Examiner

Jaison P. Thomas

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/04, 9/04, 1/05, 9/06, 11/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restriction***

1. Applicant's election with traverse of Group I in the reply filed on 12/12/2006 is acknowledged. The traversal is on the ground(s) that there is no burden to search all the claims of Group I and Group II together. This is not found persuasive because as stated in the restriction requirement dated 10/11/2006 the two inventions can be classified in different classifications thus acquiring separate status in the art as well the inventions requiring a different field of search. Additionally the product can be made via different processes which would require additional searching. Thus a serious burden has been established on the examiner.

The requirement is still deemed proper and is therefore made FINAL.

### ***Double Patenting***

2. Claims 1-9, 15-20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-15 of copending Application No. 10/786651. Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim methods of preparing a carbon with enhanced electronic conductivity via the oxidative polymerization of conducting polymer in presence of a carbonaceous material to produce a grafted polymer carbon composite using ozone as an oxidizing agent. The claims of the instant application require sulfonation of either the monomer or the resulting polymer. It would have been obvious to add a step to sulfonate the polymer or

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the monomer of the copending application method since sulfonation is notoriously well known in the art to dope conducting polymers to improve the overall conductivity of the polymer.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedges (US Patent 6132645) in view of Jasne (US Patent 4731408).

Hedges teaches methods of producing electrically conductive compositions comprised of carbon particles coated with conductive polymers. Carbon particles which are suggested include carbon black, "rod-like" particles which examiner construes as equivalent to nanotubes, and graphite or graphitic material (Column 6, lines 3-16). Conductive polymers that can be used to coat the particle include polythiophene, polypyrrole, polyaniline, polyfuran, and polyphenylene sulfide (Column 6, lines 30-35). Synthesis steps for producing a conductive polymer include using a protonic acid and an oxidizing agent (Column 7, lines 30-32) wherein the protonic acid can be used to create a doped form of the conductive polymer which can occur after the polymer is

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made (Column 10, lines 22-24) or occurs in situ during the polymerization (Column 7, lines 30-32) which examiner construes as equivalent to the sulfonation of a monomer. Protonic acids that are disclosed include various types of sulfonic acids (Column 7, lines 39-44). Oxidizing agents include ammonium persulfate, inorganic perchlorates, inorganic chromates and peroxides (Column 9, lines 25-29).

With respect to the pH limitations of instant Claims 7 and 8, the examiner respectfully submits that such limitations would be inherently possessed by the prior art composition. Specifically, the prior art contains similar components which are made in a similar/identical manner and therefore would inherently possess the required pH values that are required by instant Claims 7 and 8.

Hedges is relied upon as disclosed above. However, Hedges does not teach a method of oxidatively polymerizing the conductive polymer using ozone as an oxidizing agent as required by instant Claim 1.

Jasne teaches methods of oxidative polymerizations of conductive polymers using a variety of different oxidizing agents. Such oxidizing agents disclosed include ammonium persulfates, perchromates, perchloric acids and ozone (Column 4, lines 14-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the oxidants of Hedges with the ozone oxidant of Jasne as substitution of art recognized equivalents is within the level of the ordinary skill in the art.

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5. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Srinivas (WO 03/100884) in view of Jasne (US Patent 4731408).

Srinivas teaches methods of creating a sulfonated conducting polymer-grated carbon material which can be further metallized (Abstract). The composition is made by a method of oxidative polymerization of monomer of conducting polymer is in the presence of an oxidizing agent (pg. 26, lines 24-27) wherein the conductive polymer can be sulfonated after polymerization or the monomer can be sulfonated and then subsequently polymerized (pg. 27, lines 1-5). Sulfonating agents include chlorosulfonic acid and acetylsulfonic acid (pg. 29, line 15-16) and the reaction can be carried out in acidic conditions i.e. pH of 4 to 5 (pg. 29, line 13). Examples of oxidizing agents include sodium persulfate, ammonium persulfate, hydrogen peroxide, potassium permanganate, ferric chloride and others (pg. 30, lines 20-22). Further the resulting polymer grafted carbon composite can be metallized using platinizing agents such as chloroplatinic acid, platinum nitrate, platinum halides, platinum cyanide and others (pg. 31, lines 30-32) in conjunction with reducing agents such as formaldehyde, formic acid, sodium borohydride, hydrogen, hydrazine or hydroxyl amine (pg. 32, lines 12-15).

Srinivas is relied upon as disclosed above. However, Srinivas does not teach the use of ozone as a oxidizing agent as require by instant Claim 1.

Jasne teaches methods of oxidative polymerizations of conductive polymers using a variety of different oxidizing agents. Such oxidizing agents disclosed include ammonium persulfates, perchromates, perchloric acids and ozone (Column 4, lines 14-30).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the oxidants of Srinivas with the ozone oxidant of Jasne as substitution of art recognized equivalents is within the level of the ordinary skill in the art.

### ***Conclusion***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 8:30 am to 5:00 pm.

7. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jaison Thomas  
Examiner  
2/9/2007

JT

  
Mark Kopec  
Primary Examiner